

What is claimed is:

1. A sheet-like board member including a first planar surface and a second planar surface provided opposite the first surface, comprising:

5 mask which is formed on the second surface and has a pattern¹⁰³⁰ corresponds to a plurality of first pads formed in a semiconductor element mount region or in the vicinity of the semiconductor element mount region.

2. The sheet-like board member as defined in claim 1,
10 wherein the mask is made of photoresist

3. The sheet-like board member as defined in claim 1,
wherein the mask is made of a conductive film..

4. The sheet-like board member as defined in claim 1,
wherein the mask is formed on a region corresponding to a wiring
15 directly or integrally connected to the first pad.

5. The sheet-like board member as defined in claim 1,
wherein the first pads are bonding pads or pads on which solder
balls are to be fixed.

6. The sheet-like board member as defined in claim 1,
20 wherein a conductive coating film or a photoresist film which is substantially identical with a die pad is provided in the semiconductor element mount region.

7. The sheet-like board member as defined in claim 1,
wherein a conductive coating film or photoresist film which
25 is substantially identical with a passive element die pad

and/or outer lead electrode is formed on the second surface.

8. The sheet-like board member as defined in claim 1, wherein the passive element is a chip resistor or a chip capacitor.

5 9. The sheet-like board member as defined in claim 1, wherein patterns which are substantially identical with guide pins or guide holes into which the guide pins are to be inserted are formed in mutually-opposing sides of the sheet-like board member.

10 10. The sheet-like board member as defined in claim 1, wherein the sheet-like board member is made of a pressed metal.

11. The sheet-like board member as defined in claim 1, wherein the sheet-like board member is formed from a conductive foil, and the conductive coating film is formed from material
15 differing from that of the conductive foil.

12. A sheet-like board member including a first planar surface and a second planar surface on which protuberances of desired heights are formed and which is provided opposite the first planar surface, wherein the protuberances constitute a
20 plurality of first pads in a semiconductor element mount region and the vicinity thereof.

13. The sheet-like board member as defined in claim 12, wherein the protuberances constitute the wirings integrally formed with the first pads.

25 14. The sheet-like board member as defined in claim 13,

wherein the protuberances constitute second pads integrally formed with the wiring.

119
15. The sheet-like board member as defined in claim 12, wherein the first pads and/or second pads are bonding pads,
5 or pads on which solder balls or bumps are to be mounted.

16. The sheet-like board member as defined in claim 12, wherein the protuberances constitute die pads to be provided in the semiconductor element mount region.

17. The sheet-like board member as defined in claim 12,
10 wherein the protuberances constitute passive element die pads and/or outer lead electrodes.

18. The sheet-like board member as defined in claim 14, wherein the passive element is a chip resistor or chip capacitor.

15 19. The sheet-like board member as defined in claim 9,
120 wherein patterns which are substantially identical with guide pins or guide holes into which the guide pins are to be inserted are formed in mutually-opposing sides of the sheet-like board member.

20 20. The sheet-like board member as defined in claim 12, wherein a plurality of patterns formed from the protuberances are taken as a unit, and the unit is arranged on the sheet-like board member in a matrix pattern.

21. The sheet-like board member as defined in of claim
25 12, wherein the sheet-like board member is made of mainly Cu,

Al, an Fe-Ni alloy, a Cu-Al multilayered member, or an Al-Cu-Al multilayered member.

22. The sheet-like board member as defined in claim 12, wherein a conductive coating film which is formed from material differing from that of the protuberances is formed on the upper surfaces of the protuberances.

23. The sheet-like board member as defined in claim 12, wherein the side surfaces of the protuberances have an anchoring structure.

10 112 24. The sheet-like board member as defined in claim 12, wherein the conductive coating film constitutes an anvil-shaped structure in the vicinity of the top surfaces of protuberances.

15 25. The sheet-like board member as defined in claim 12, wherein the conductive coating film is formed from Ni, Au, Ag, or Pd.

26. A sheet-like board member including:

an underside whose portions to be encapsulated in plastic are wholly planar;

20 a sheet-like front side of predetermined thickness which is provided on the underside, wherein a plurality of first pads to be formed in a semiconductor element mount region or the vicinity thereof and protuberances which are to become wirings integrally formed with the first pads are formed within a region enclosed by an abutting region which is brought into contact

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with an upper metal mold; and

a sealed space which is defined between the first side and the upper metal mold and at least within the area of the first side enclosed by the abutting region.

5 \ 27. A method of manufacturing a sheet-like board member comprising the steps of:

preparing a sheet-like board member, the sheet-like board member including a first surface of a planar surface and a second surface of a planar surface disposed opposite to the first surface, on which a mask pattern corresponding to a plurality of first pads to be formed in a semiconductor element mount region or the vicinity thereof;

forming protuberances on a region corresponding to the first pad, by etching a part of the second surface through the mask to make the second surface except for the region corresponding to the first pad being lower level;

mounting a semiconductor chip on the element mount region and electrically connecting to the chip through the first pad;

placing the sheet-like board member in a metal mold and filling, with resin, the space defined between the lead frame and the upper metal mold; and

partially removing the lead frame exposed through the underside of the filled plastic and separating the protuberances into pieces.

25 \ 28. A method of manufacturing a sheet-like board member

as claimed in claim 27, wherein after forming protuberances, further comprising the steps of:

removing mask formed on the element mount region; and lowering a level of the element mount region to be a level
5 between a surface of the protuberances and a level of a region except for the element mount region so that the level of the element mount region is lower than the level of the bonding pad.

29. A method of manufacturing a semiconductor device
10 comprising:

a step of preparing a sheet-like board member, the sheet-like board member including an underside whose portions to be encapsulated in plastic are wholly planar, and a plurality of first pads to be formed in a semiconductor element mount
15 region or the vicinity thereof and protuberances which are to become wirings integrally formed with the first pads are formed within a region enclosed by an abutting region which is brought into contact with an upper metal mold;

a step of mounting a semiconductor element in the
20 semiconductor element mount region and electrically connecting the first pads to the semiconductor element;

a step of placing the sheet-like board member in a metal mold and filling, with resin, the spaced defined between the lead frame and the upper metal mold; and

25 a step of partially removing the lead frame exposed

through the underside of the filled plastic and separating the protuberances into pieces.

30. The method of manufacturing a semiconductor device as defined in claim 26, wherein the entire underside of the sheet-like board member corresponding to the area which is to be encapsulated in plastic is brought into contact with a lower metal mold.

31. The method of manufacturing a semiconductor device as defined in any one of claim 25, wherein vacuum suction means are distributed over the portion of the lower metal mold which is brought into contact with the underside of the lead frame.

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